

## REVIEWS.

ART. XIII.—*Report of the Sanitary Commission of Massachusetts, made by the Legislature in 1850.* Printed by order of the Legislature. Boston: Dutton & Wentworth, State Printers, 1850. 8vo. pp. 544.

THE subject of a sanitary survey is not entirely new in this State, although it may not be familiar to all of its people. It was first brought before the American Statistical Association in the spring of 1847. That society referred it to a committee, with orders to prepare a memorial to be presented to the legislature, asking that measures be taken to ascertain the sanitary condition and resources of the commonwealth, and setting forth the reasons for, and advantages of, such an undertaking. This memorial was accepted by the association, and ordered to be presented to the legislature by the same committee. This was done in January, 1848. The House of Representatives referred the matter to the committee on the judiciary, who, after giving the friends of the measure a patient hearing, concluded that, as the subject was new both to the legislature and to the people, it would be inexpedient to undertake the proposed survey until some pains should be taken to inform the public of its plans and advantages; they therefore advised that a large edition of the memorial of the Statistical Association be printed for general distribution, and that then the whole matter be referred to the next legislature. The memorial was printed as House Document No. 16 for 1848, and very generally distributed through the State.

The Massachusetts Medical Society, at its annual meeting in May, 1848, took this matter into consideration, and referred it to the counsellors, to take such action as they might deem proper. The counsellors voted to memorialize the legislature, praying them to grant the petition of the Statistical Association. In January, 1849, the counsellors sent to the legislature a memorial, urging, at considerable length, this measure upon the government, and giving the reasons for which it seemed to them it should be adopted.

This memorial of the medical society was referred to a select committee of the legislature; and on their recommendation a large edition of this document, and the memorial of the Statistical Association of 1848, were printed for distribution among the members and people. At the end of the session in May, a resolution was passed authorizing the Governor "to appoint three persons to be commissioners, to prepare, and report to the next general court, a plan for a sanitary survey of the State, embracing a statement of such facts and suggestions as they may think proper to illustrate the subject." The commissioners were to have two dollars a day for the time they should be employed, and also to be paid for their expenses of travel, stationery, and postage. They were authorized to expend fifty dollars in books on this subject, which should be deposited in the State Library. Five hundred dollars were appropriated to meet the whole expenses of this commission.

The governor appointed Lemuel Shattuck, Esq., of Boston, Jehiel Abbott, M. D., of Westfield, and Nathaniel P. Banks, Esq., of Waltham, as members of this sanitary commission.

The labouring oar of this whole matter fell principally upon Mr. Shattuck, the chairman, who made the inquiries, and wrote the report, with the aid of his associates. Their report was presented to the legislature in April, 1850. It was then ordered to be printed. This was finished in December, 1850, and offered to the legislature in January, 1851, for their consideration and further action.

Thus it is seen that this matter has been before three successive legislatures; and after three years of urgency from the friends of the measure, it is matured so far as to have a plan brought forth in a tangible shape, and offered to the fourth legislature for their adoption. The legislators of Massachusetts surely will not be accused of any rashness or indiscreet haste in undertaking to ascertain the sanitary condition of the people of that intelligent and generous commonwealth.

This report of the commission is printed in an octavo volume of 544 pages, in the style of the reports of the Natural History Survey, and is now ready for distribution, or disposal otherwise, at the order of the general court.

The commission, in their plan, have not confined themselves to the original purpose of the proposers of this measure, which, like the British inquiries of a similar nature, was merely to inquire into the actual sanitary condition of the people, and ascertain the various influences that acted, for good or evil, upon their health, and when those facts should be made known, further plans would be suggested and adopted for the future well being and health of the people. But they have examined and discussed at great length all the direct and collateral topics connected with the matter of general and public health, and shown with great clearness the advantages that will result from the investigation of the connection between outward circumstances, domestic conditions, and personal habits, and health and life.

The report first contains a history of the sanitary movements abroad, and shows what has been done, and with what advantage, in other nations. Going back to ancient times, Mr. Shattuck informs us of the sanitary legislation and customs of Greece and Rome, and, coming down to modern times, he gives us a similar history of Great Britain, France, and Germany.

Very active and effective measures have been taken by some of the European governments to ascertain the sanitary condition of their people, and in all cases they have revealed such a state of things, in their outward circumstances or in their domestic life, as to leave no doubt that many of the causes of sickness and death existed and were removable, and consequently that much of the sickness might be prevented and many deaths postponed.

The report quotes from the sanitary documents published in Great Britain, and shows that there are frightful differences in the vitality of people in different districts and in different conditions of life. There are remarkable differences, in this report, between the town and country. Thus, it is ascertained, from a very extensive survey, covering about seven millions of people, that the annual deaths are, in the city districts, 27,073, and in the country districts 19,300, among one million of persons living in each class of places. The rate of mortality was one in 37 in the city, and one in 52 in the country. Here, then, is an annual excess of 7773 deaths in each million of persons living in the large and dense towns over the number of those who die in the country, in an equal population; and this excess must be chargeable to something connected with the density of population.

Some diseases prevail more, and are more fatal, in the towns than in the country. In a million living in each class of places, the mortality (average of four years) was as follows:—

	City.	Country.
Total deaths . . . . .	27,073	19,300
From Consumption and scrofula . . . . .	4,515	3,761
" Small-pox . . . . .	1,045	507
" Measles . . . . .	914	354
" Scarlatina . . . . .	988	478
" Typhus . . . . .	1,254	998
" Epidemic and contagious . . . . .	6,013	3,422
" Teething . . . . .	616	120

There are also great differences of mortality in the different parts of the same city, as, according to Mr. Chadwick, in London, in St. George's, Hanover Square, the average age at death is of the gentry 45, and of the labourers 27 years, while in St. Giles the ages are of the gentry 50, and of the labourers 17 years.

These last differences are connected with the supply of water, cleansing the streets, and ventilation of the streets and dwellings. Dr. T. Southwood Smith says that, "where fever is frequent, there is uniformly a bad drainage, bad sewerage, a bad supply of scavengers, and a consequent accumulation of filth." "If you trace down the fever districts on the map, then compare that map with the map of the commissioners of sewers, you will find that, where these commissioners have not been, there fever is prevalent, and on the contrary, wherever they have been, there fever is comparatively absent."

"Dr. Lyon Playfair calculates that, for one unnecessary death, there are also 28 cases of unnecessary sickness;" consequently, there are annually 217,668 cases of unnecessary sickness in each million of inhabitants of the large towns.

After reviewing the sanitary movement in Great Britain, Mr. Shattuck says that it is thus proved—

That the annual deaths in 10,000 people are 153 in the best, and 358 in the worst districts.

That the various forms of diseases are created, aggravated, and propagated by the narrow streets, crowded houses, filth, and the foul air that proceeds from decomposing animal and vegetable matters, whether in town or country.

That diseases and death are more frequent in the cities than in the country, and more in the narrow streets and crowded houses than in the wide and open streets and ample houses of the same city; and that this excess of disease and mortality falls mostly upon infants and persons between 20 and 30 years of age.

That the longevity of persons in bad, is 5 to 25 years less than in good situations, and that the former have a lower condition of life, less health and strength, and less productive power than the latter.

That these differences of life and death are removable by the removal of the noxious agencies and circumstances.

That the annual mortality of Great Britain might be reduced from one in 44 to one in 50 by the removal of these noxious causes.

That children born and trained amidst these noxious influences have a lower degree of physical, mental, and moral power, and hence they are comparatively feeble, sick, idle, improvident, vicious, and short-lived.\*

It is now very natural to inquire, whether similar conditions and circumstances do not exist, to a greater or less extent, in this country, and whether they do not produce the same depression of life, and the same excess of disease and mortality, in Massachusetts as in England.

\* Report, p. 46, &c.

The sanitary legislation of Massachusetts extends as far back as the year 1692. From that time to the present, laws have been enacted for the prevention or the removal of nuisances, &c., which might interfere with public health; for the establishment of drainage and sewerage, with reference to small-pox, and other contagious diseases, to insanity, and quarantine; and for the election of boards of health.

The whole sanitary legislation of this State, past and present, has been unstable, uncertain, and subject to many changes, which are sometimes made without apparent good reason. The laws in regard to this subject, as they now stand, form a very imperfect system, and are inadequate to the purposes for which they were made. They have been subjected to so many alterations, to repeals, partial or entire, that it is not now easy to determine what is in force.

In order to remedy this matter, the commission propose to establish an entire new law or code of laws, which shall cover the whole ground of health, sanitary police, and everything which has a direct or indirect connection with man and his powers of body.

Mr. Shattuck gives a succinct history of the epidemics that are known to have prevailed in New England since its first settlement. But, of course, this history is very imperfect for the want of due observations and records. This history is confined to the epidemics which have especially attracted attention, and excited alarm, and have had an observer willing to write their record. But there have doubtless been many epidemics that have had no observer to notice them, and no historian to record them and bring their history to us.

Epidemics must constitute only a part of the diseases that affect the people. Sporadic diseases, of every sort and everywhere present, in some form or other, are the principal destroyers of the health and the life of man. They have no record. It is not known how frequently they appear, nor how fatally they operate.

"For the last forty years, notwithstanding the mass of medical literature that has been published, less definite information has been obtained concerning epidemics than in the previous periods. The almost entire neglect of records, prior to the adoption of the registration system, renders it difficult to give anything approximating to an accurate view of the subject. If a careful examination were made into the history of each town, many important facts might be gathered. But it is serious and lamentable to observe, in looking over our published local histories, how little attention has been paid to this matter. *The history of the health of the people* should be regarded as the most important part of history. Yet it has generally been considered unworthy of notice, or, if noticed at all, merely among the incidental matters of little consequence."\*

This is the object of the proposed sanitary survey: to ascertain the diseases that appear and prevail in the various districts and situations, their frequency and intensity, their fatality, and the circumstances and habits that are connected with them.

Without pretending to give a complete history of these matters, or even approaching it, Mr. Shattuck alludes to the influences of various circumstances upon the production and results of disease. He states a few facts in regard to seasons, occupations, and domestic conditions, to show that they certainly have some, and probably great, influence on human health and life, and to show that these matters are worthy of further and minute inquiry, in order to determine exactly the measure and manner of their influence, and whether they can be modified or controlled by the art of man.

\* Report, page 80.

So far as can be determined from a comparison of the Registration Reports from the rural districts of Massachusetts for seven years, with the bills of mortality of Boston for ten years, the country is the more healthy in the summer, and the city in the autumn, both nearly alike in the winter and the spring. August and September are the most fatal months in the city, on account of the greater prevalence of diseases of the digestive organs. September and October are the most fatal months in the country, on account of the greater prevalence of fever.

The nature of the occupation has doubtless much influence on health and life, but to what extent remains to be determined by further investigation. The seven annual Registration Reports of Massachusetts give tables of the average ages of males engaged in several professions, who were over twenty years old at death. These are condensed in the report into one table,\* which we here quote :—

Deaths.	Occupation.	Average age.	Deaths.	Occupation.	Average age.
4737	Farmers	64.89	46	Bakers	46.69
39	Hatters	58.79	81	Cabinet-makers	44.80
110	Coopers	57.39	73	Stonecutters	44.46
114	Clergymen	56.64	17	Paper-makers	44.29
55	Lawyers	55.47	902	Shoemakers	43.41
137	Physicians	55.	1609	Labourers	42.79
237	Blacksmiths	54.49	1061	Seamen	42.47
613	Carpenters	51.16	110	Painters	42.36
323	Merchants	50.73	138	Fishermen	41.63
65	Tanners and Curriers	49.90	115	Manufacturers	40.48
135	Masons	48.55	110	Mechanics	37.20
213	Traders	46.79	34	Printers	36.91

These few facts render it very certain that there is a difference in the value of life in the different occupations, and very probably, that this difference is constant.

The diseases or causes of death differ in different situations, and especially in city and country. Mr. Shattuck has analyzed the causes of 57,484 deaths, in the rural districts of Massachusetts, from 1842 to 1848; and of 25,795 deaths in the city of Boston from 1840 to 1849.†

Among 10,000 deaths, in each place or class of places, from known causes, there died of the various classes of disease—

	Country.	City.
Zymotic or endemic } . . . 2755 . . . 3159		
Epidemic and contagions } . . . 1299 . . . 1398		
Of uncertain seat . . . 905 . . . 927		
“ Nervous organs . . . 2959 . . . 2240		
“ Respiratory “ . . . 192 . . . 173		
“ Circulatory “ . . . 490 . . . 1221		
“ Digestive “ . . . 45 . . . 30		
“ Urinary “ . . . 114 . . . 153		
“ Generative “ . . . 51 . . . 53		
“ Locomotive “ . . . 16 . . . 23		
Skin . . . 768 . . . 246		
Old age . . . 406 . . . 372		
Violence . . .		
10,000		10,000

\* Report, p. 87.

† Report, p. 90.

There appear to be many more deaths from the zymotic diseases, and from diseases of the organs of digestion and generation, in the city than in the country, but there seem to be many more deaths from pulmonary diseases and from old age in the country than in the city. The other classes of causes present no very marked difference in their effects upon these places.

The proportion of deaths to those from all causes was greater from 48 and less from 44 of the specified causes in the city than in the country.

These differences were the greatest from the following causes.

Deaths from certain causes among 10,000 from all causes:—\*

	Country.	City.		Country.	City.
Dysentery	420	370	Whooping cough	89	133
Fever, typhus	909	645	Measles	73	228
Apoplexy	102	73	Small-pox	19	134
Paralysis	166	79	Thrush	2	38
Consumption	2389	1471	Atrophy	36	201
Old age	768	246	Debility	28	103
Colic	26	5	Hydrocephalus	212	367
Peritonitis	12		Pneumonia	441	634
Drowned	142	83	Enteritis	155	205
Cancer	123	56	Teethiog	42	219
Cholera	52	281	Child-birth	104	151
Fever		65	Intemperance	45	78

These are not stated in the report as the sum of all the knowledge that is desirable or obtainable, nor as establishing any law, but only as indications of differences, which should lead to further and more varied inquiry. But the facts, so far as known, lead these commissioners to state—†

That there is a great difference of life in various localities, circumstances and conditions of men and society.

That there are causes of unnecessary sickness and premature death here among us as well as in Europe.

That there is need of legislative action to provide a remedy for the removal and the prevention of these evils.

That typhus fever, cholera, dysentery, small-pox, and other epidemics—consumption, and other fatal diseases—constantly or frequently prevail in this State.

That these active causes of diseases are increasing among us.

And that a thorough investigation is needed to ferret out the whole extent and all the circumstances of disease and mortality; and to ascertain the exact relation of these events to other events and circumstances that may seem to be their causes. There is also needed a more appropriate and more effective system of legislation, which shall reach all the circumstances of life, and all the causes of sickness and death, and provide for the protection of the one, and the prevention and the removal of the other; and thus, by the ever present and strong arm of the government, secure to the people the means and opportunity of enjoying the highest degree of health and the longest life consistent with their nature and constitution.

For this purpose, the commissioners propose to repeal all present laws respecting health and sickness, and re-enact all that are useful and adapted to the wants and conditions of the present time, and add such others as are needed to complete the sanitary code, and establish a perfect sanitary police in this commonwealth.

\* Report, p. 90, &c.

† Report, page 103.

The proposed law fills fifteen pages,\* and is divided into forty sections. It embraces a plan for obtaining annual reports of the sanitary condition of every town and city, for the registration of births, marriages, and deaths; for the detection and the removal of nuisances; and for the regulation of burials.

Sec. 1.—Provides for the appointment, by the governor, of seven persons, who, together with the Governor and the Secretary of the Board of Education, shall constitute the State Board of Health. The seven are to hold their offices seven years, but one is to go out, and his place to be filled by re-appointment, or by another, in each year.

Sec. 3.—Provides for the election of a Secretary of this Board, who shall be the principal executive officer.

Sec. 4.—Requires that the Board of Health execute the sanitary laws of the State; decide all sanitary questions proposed to them by the State, or by towns; advise as to the location of public buildings; visit, and superintend the sanitary condition of the public charitable institutions; instruct the local Boards of Health as to their powers and duties; superintend the decennial enumeration of the people of the State according to the constitution; and make a report in each year to the legislature of the sanitary condition of the State. They are authorized to purchase books relating to public health, to the amount of fifty dollars annually, for their use and for that of their successor in office.

Sec. 6.—Requires the Secretary to keep the accounts of the Board; to make a sanitary survey of any town or district when directed by the Board; to superintend the registration of births, marriages, and deaths; to superintend the decennial enumeration of the people, and prepare the abstracts from the returns of population; to take charge of all the local reports from the several towns; to report to the Board annually the sum of the sanitary information received, and to diffuse among the people all this information, so that each town and family may profit by the experience and the wisdom of all the rest.

Sec. 8.—Provides for the appointment of local Boards of Health by the mayors and aldermen of the cities, and by the selectmen of the towns, in each of these several places.

Sec. 9.—Requires these local Boards to execute the sanitary laws of the State and the orders of the general Board, and, as far as possible, prevent sickness and prolong life by the removal of the causes of disease.

Sec. 11.—Authorizes these local Boards to purchase sanitary works for the benefit of their respective towns and cities.

Sec. 12.—Requires the local Boards to appoint a Secretary, and authorizes them to appoint a Medical Health Officer and a Surveyor, and to fix the compensation for these persons.

Sec. 13.—Requires the Medical Health Officer to ascertain the existence of diseases of various kinds, to compare their prevalence and results in various seasons and in different years, and in the different districts and classes of society; to ascertain any atmospheric, local, or personal causes of the temporary increase or decrease of disease and mortality; to point out nuisances, or other causes of disease; to suggest remedies for sanitary evils, and in all other ways execute the sanitary orders of the local Board.

Sec. 15.—Requires the Surveyor to prepare a map of the town, or of any of its parts, showing the location, level, and grades of the roads and streets, mill-ponds, watercourses, and seats of nuisance, and to prepare plans of drainage and sewerage.

\* Report, page 307 to 321.

- Sec. 16.—Authorizes the local Boards to make regulations, for ascertaining  
 The causes of all the deaths in the town.  
 The prevailing diseases in the towns, and their causes.  
 The amount of sickness in different classes of people.  
 For preventing or mitigating diseases.  
 For affording medical relief to persons diseased or threatened with disease.  
 For abating nuisances.  
 For restraining persons or articles affected with the small-pox contagion.  
 For establishing hospitals for contagious diseases.  
 For constructing sinks, ash pits, privies, cesspools, drains, and sewers, and  
 for the removal of every sort of offal.  
 For cleansing grounds, buildings, and vessels.  
 For regulating the location of chemical works, slaughter-houses, and every  
 kind of building or process that may be offensive or injurious.  
 For regulating the sanitary condition of houses and shops that may be  
 crowded, and the heat and ventilation of school houses, and other public  
 buildings.  
 For regulating the sale of unwholesome food and drink, intoxicating liquors,  
 adulterated medicines, &c.  
 For the superintending of burial-grounds and interments.  
 For the registration of births, marriages, and deaths;  
 And for executing all other sanitary orders of the General Board of Health.
- Sec. 17.—Authorizes the local Board in any sea port to establish quaran-  
 tine.
- Sec. 18.—Requires that the head of any family in which a case of small-  
 pox exists to give notice of it to the Board of Health.
- Sec. 21.—Requires sheriffs, marshals, and constables to execute the orders  
 of the Boards of Health in removing nuisances and persons affected with con-  
 tagious diseases, breaking open houses or other places where these may be,  
 and impressing, for the use of the sick, houses, nurses, attendants, and other  
 things needful for this purpose.
- Secs. 22, 23, 24.—Provide for the payment of all these operations, and all  
 expenses of the Board of Health by the town or city.
- Sec. 25.—Requires the general Board to take measures to prevent the  
 spread of contagion.
- Sec. 26.—Imposes penalties on the resistance to, or infractions of, the rules  
 and orders of the Board of Health.
- Sec. 27.—Requires the local Boards to report annually to the general  
 Board the sanitary history and condition of their towns and cities, and to re-  
 commend such measures as seem to them improvements.
- Sec. 28.—Imposes a penalty on any town which shall neglect to appoint a  
 Board of Health, and upon the Board if they neglect to report to the general  
 Board.
- Secs. 30, 31, 32.—Require the owner of any property to remove any  
 nuisance or filth from it, at his own expense, on notification for this purpose  
 from the Board of Health, and if he neglect to do so, he shall be fined for  
 each day's negligence, and the Board shall remove it at his cost.
- Sec. 35.—“Any person injured, either in his comfort, or in the enjoyment  
 of his estate, by any nuisance, may have an action on the case,” and recover  
 damages of the person by whose action or negligence the nuisance is produced  
 or continued.
- This is the substance of the law proposed by the sanitary commission.—  
 There are many details and incidental and collateral minutiae and explana-



tory matters, necessarily omitted here, which give the system a completeness in its plan and effectiveness in its operation.

This law is now proposed to the government of Massachusetts for their adoption. After the attention and encouragement of three successive legislatures; after the careful consideration of two committees, and one commission appointed expressly for this purpose; after the active urgency of the friends of this measure, who, as naturalists, as philanthropists, and as political economists, have pressed it upon the people and the law-givers through several years; after all this interest and labour in the production of the plan, it is confidently hoped that this, the fourth legislature that has had the matter under consideration, will adopt the propositions of the commission, and provide by public law for the security of human life and health, as effectively as they do for the security of property.

The commission recommend a series of fifty measures, which constitute their plan of sanitary reform. These fifty recommendations are stated in the form of specific propositions, and are supported by many facts and arguments, which run through one hundred and thirty-two pages of the report.\* Many of these measures are already indicated in the law which we have already analyzed. Others are subsidiary, and need further explanation.

In the construction of the general Board of Health, the commission recommend† that it should contain:—

1. "Two physicians, at least, of scientific attainments, and of extensive practical experience in their profession, thoroughly understanding sanitary science, and deeply feeling the importance of wise sanitary measures."
2. "One counsellor at law, who, besides the general knowledge of law and medical jurisprudence, might especially be able to investigate any legal questions that might arise."
3. "One chemist or natural philosopher. Many questions relating to the influence of the elements on the production or prevention of disease may require the special investigation of an experienced chemical philosopher."
4. "One civil engineer, possessing competent knowledge to determine the best methods of plaining and constructing public works, and the best architectural sanitary arrangements of public buildings, workshops, and private dwellings."
5. "Two other persons of acknowledged intelligence, good judgment, and practical experience in the common affairs of life."
6. "All should make themselves thorough masters of the objects of their appointment, should have sagacity and foresight to perceive the bearing and effect of every measure proposed, be eminently practical men, wise in deliberation, and judicious in decision."

The Secretary is to be the active and efficient officer of the Board. "He should be thoroughly educated in the science of public health, and the causes and prevention of disease; and be capable of arranging, analyzing, and combining the facts that may be collected, and of making such deductions from them as will be most useful to science." For this purpose, he must be a man of high order of intellect and education. He must devote his whole time to the work; and for this he should receive a competent reward.

The local Boards, like the general Board of Health, are to be somewhat permanent. They are to consist of three, five, or seven persons, each of whom is to hold his office as many years as there are members, one being appointed in each year. Besides these, the principal officer and the clerk or registrar of the town or city are to be *ex officio* members of the Board.

These local Boards are to make a report annually to the town of the sani-

tary condition of the town or city during the preceding year, and to send a copy of their report to the Secretary of the general Board.

The fifteenth recommendation proposes "that provision be made for obtaining observations of the atmospheric phenomena, on a systematic and uniform plan, at different stations" in various parts of the State.

The precise influence of the atmosphere in its various conditions upon health and disease is not yet determined. That this influence is very great in the production of colds, influenza, and other epidemic and sporadic diseases, is hardly doubted by any: but how far this extends is yet to be ascertained by many and varied observations of the atmospheric phenomena, and of co-existing disease; both of which must be systematized and compared, in order that valuable deductions may be drawn from them, and the true connection between these classes of facts determined.

The reports of the Registrar General of England for several years contained the meteorological observations which were made at the Royal Observatory at Greenwich, in connection with the returns of deaths and diseases. Similar combinations of meteorology with mortality have been published by M. Quételet, at Brussels, in Belgium. The legislature of Massachusetts has already ordained the establishment of several stations in various parts of the State, not exceeding twelve in number, "where shall be deposited the instruments necessary for making systematic observations in meteorology, according to the plan recommended by the Smithsonian Institute, at an expense not exceeding one hundred dollars for each."\* The results of these observations, when compared with the sanitary reports, and the bills of mortality, will throw much light on the connection of the atmospheric condition and influence with health and disease.

We would call public attention especially to the sixteenth recommendation in this report: "That, as far as practicable there be used, in all sanitary investigations and regulations, a uniform nomenclature for the causes of death and for the causes of disease."

A uniform nomenclature of diseases and their causes is as important in all descriptions and reports respecting sickness and mortality as a uniform grade of instruments is in meteorological reports, or as a uniform standard of weights and measures is in all commercial regulations.

It is difficult to conceive of so great uncertainty, variety, and inaccuracy in the application of terms in any other science as in the reports of mortality and its causes, and in the popular notions and conversation upon these subjects. Various names are used to designate the same facts and conditions, and the same term is applied at different times and in different places to describe different diseases. There is, among physicians, some inaccuracy of diagnosis and more inaccuracy of language, and among the people both of these prevail to a great extent.

The Registrar-General of England, in his seventh Report,† publishes a list of all the various names and terms, intended to describe diseases and the causes of death, that came to his office in the reports of the local registrars throughout the kingdom. They amount to 1177. These, however, are reduced to 95 in the nosological arrangements of these reports.

Perhaps, if we could collect the terms which are used in conversation, or in writing, by the friends of the deceased, or by the physicians, or by others who should report, to designate the causes of death throughout the United States, we should find as great a variety of terms as is found in England.

\* Acts and Resolves of March, 1850, chapter 1. p. 104.

† Pages 293 to 314.

We have now before us the registration reports and bills of mortality of two States and of several cities. The following are the numbers of terms used in these to designate the causes of death:—

	Year.	Number of causes of death.		Year.	Number of causes of death.
Massachusetts	1843	106	New York City	1844	96
"	1847	97	"	1849	118
New York State	1847	153	Boston	1837	97
"	1848	175	"	1849	89
Charleston, S. C.	1828 to 1845	236	Baltimore	1845	85
Philadelphia	1840	208	"	1849	95
"	1846	222	Providence.	1849	74
New Orleans	1849	197	Lowell	1849	59
Washington	1849	148			

It is not necessary here to show the precise difference between the nosological nomenclatures of these different States and cities. These facts are sufficient to show that they are very unlike. It is not to be supposed that the distinct diseases or causes of death in Charleston, S. C., are to those of Lowell, Mass., as 236 is to 59, or that those of Philadelphia are to those of Boston in the ratio of 222 to 97, as is apparent from the bills of mortality of these cities. But, making all due allowance for the difference of climate and endemic influence, and for some rare diseases which may occur in some places, and in some years and not in others, and also for variety of accidents which are reported as distinct causes, the difference in these numbers is probably to be charged mainly to the difference of minute diagnosis of disease, or to difference of language in those who make the reports of deaths, or in those who make and publish the record. Some reporters, being unacquainted with scientific nosology, give popular names of the diseases or causes of death, which may be many and various as applied to the same disorder or lesion; or different reporters may give the same name to various diseases. Some registrars record these as they are reported—others condense them, and, instead of the varying popular names, give the single scientific synonyme.

But, whatever may be the cause of these differences of nomenclature in the bills of mortality, it is manifest that the language used in Charleston and Philadelphia to designate diseases or causes of death is not like that used in Boston, Lowell, and Providence, to describe similar facts. It is, therefore, very difficult, if not impossible, to combine the reports of deaths and their causes in these various places, and arrange their facts in one system, in order to afford the broadest ground of reasoning and inference, in respect to life and mortality.

The sanitary commission had this difficulty in view, and in order to meet it, they proposed the adoption of one uniform nomenclature or system of naming diseases, by all the reporters and registrars in this State. The commission spoke for Massachusetts alone; but it is to be hoped that their suggestion will go farther, and that their nomenclature will be adopted by all the medical writers and registrars in all other States of the Union.

The Massachusetts Medical Society, at the request of the commissioners, directed their committee to prepare a nosological system, to be used by the registrars of the State. The system which they prepared, and which is adopted by the commission, and published and recommended in their report, is mainly that which was prepared by Mr. William Farr, of London, for the Registrar-General of England, and is used in all the English Registration

Reports. There are some few alterations, to suit the difference of diseases in England and America. It is similar to the nomenclature of diseases prepared by a committee of the American Medical Association, and printed in their Transactions for 1847.

This arrangement divides the diseases into twelve classes:—

- I. Zymotic, or endemic, epidemic and contagious diseases.
- II. Diseases of uncertain or variable seat.
- III. " Brain and nervous system.
- IV. " Organs of circulation.
- V. " Respiratory organs.
- VI. " Digestive organs.
- VII. " Urinary organs.
- VIII. " Generative organs.
- IX. " Locomotive organs.
- X. " Skin.
- XI. Old age.
- XII. External causes.

These classes are subdivided into one hundred and eight diseases, which we here quote entire from the report\* of the commission.

#### I. Zymotic diseases.

- 1 Cholera,
- 2 Cholera Infantum,
- 3 Croop,
- 4 Diarrhoea,
- 5 Dysentery,
- 6 Erysipelas,
- 7 Fever, Intermittent
- 8 Fever, Remittent
- 9 Fever, Typhus
- 10 Hooping Cough,
- 11 Influenza,
- 12 Measles,
- 13 Scarlatina,
- 14 Small-pox,
- 15 Syphilis,
- 16 Thrush.

#### II. Diseases of uncertain or variable seat.

- 17 Abscess,
- 18 Atrophy,
- 19 Cancer,
- 20 Debility,
- 21 Dropsy,
- 22 Gout,
- 23 Hemorrhage,
- 24 Infantile disease,
- 25 Inflammation,
- 26 Malformation,
- 27 Mortification,
- 28 Scrofula,
- 29 Sudden,
- 30 Tumour.

#### III. Brain and nervous system.

- 31 Apoplexy,
- 32 Cephalitis,

- 33 Chorea,
- 34 Convulsions,
- 35 Delirium tremens,
- 36 Epilepsy,
- 37 Hydrocephalus,
- 38 Insanity,
- 39 Paralysis,
- 40 Tetanus,
- 41 Organs, disease of

#### IV. Organs of circulation.

- 42 Aneurism,
- 43 Pericarditis,
- 44 Organs, disease of

#### V. Respiratory organs.

- 45 Asthma,
- 46 Bronchitis,
- 47 Consumption,
- 48 Hydrothorax,
- 49 Laryngitis,
- 50 Pleurisy,
- 51 Pneumonia,
- 52 Organs, disease of

#### VI. Digestive organs.

- 53 Ascites,
- 54 Bowels, disease of
- 55 Colic,
- 56 Dyspepsia,
- 57 Enteritis,
- 58 Gastritis,
- 59 Hernia,
- 60 Intussusception,
- 61 Peritonitis,
- 62 Quinsy,
- 63 Stomach, disease of

- 64 Teething,
- 65 Ulceration,
- 66 Worms,
- 67 Hepatitis,
- 68 Jaundice,
- 69 Liver, disease of
- 70 Pancreas, disease of
- 71 Spleen, disease of

#### VII. Urinary organs.

- 72 Cystitis,
- 73 Diabetes,
- 74 Gravel,
- 75 Kidney, disease of
- 76 Nephritis,
- 77 Organs, disease of

#### VIII. Generative organs.

- 78 Childbirth,
- 79 Paramenia.
- 80 Puerperal fever,
- 81 Organs, disease of

#### IX. Locomotive organs.

- 82 Rheumatism,
- 83 Joints, &c., disease of
- 84 Hip, disease of
- 85 Spine, disease of

#### X. Skin.

- 86 Fistula,
- 87 Purpura,
- 88 Ulcer,
- 89 Skin, disease of

#### XI. Old age.

- 90 Old age.

#### XII. External causes.

- 91 Accident,
- 92 Burns and scalds,
- 93 Drowning,
- 94 Execution,
- 95 Freezing,
- 96 Glanders,
- 97 Heat,
- 98 Hydrophobia,
- 99 Intemperance,
- 100 Lightning,
- 101 Malpractice,
- 102 Murder,
- 103 Necrosis,
- 104 Poison,
- 105 Starvation,
- 106 Suffocation,
- 107 Suicide,
- 108 Wounds,
- 109 Unknown,
- 110 Still-born.

Mr. Farr's system, need in the English Reports, includes *hydrophobia* in the first instead of the twelfth class, and omits *remittent fever*. It puts *quinsy* among the diseases of the respiratory instead of the digestive organs. It includes *ischuria* and *stricture* among the diseases of the urinary organs, *ovarian dropsy* among the diseases of the generative organs, *carbuncle* and *phlegmon* among the diseases of the skin, and *cold* and *privation* and *violent deaths* among the external causes, which are omitted in this system of the sanitary commission. It omits also *puerperal fever* among the diseases of the generative organs, *fistula* and *purpura* among diseases of the skin, and the whole of the class of external causes excepting *intemperance*, which are included in the American system.

The seventeenth recommendation advises that,

"In laying out new towns and villages, and in extending those already laid out, ample provisions be made for a supply in purity and abundance of light, air, and water; for drainage and sewerage, for paving and cleanliness."

We have already called the attention of the readers of this Journal\* to the importance of this matter. And we cannot omit this opportunity to urge it again upon the people of this country. Our population is fast gathering into dense masses; new villages are created, villages are growing into towns, and towns into cities, and old cities are expanding their borders and condensing their interior districts. The ratio of increase of population within the last thirty years has been greater, and in some places very much greater, in the cities and dense towns than in the country parts of the States to which they belong.

In this development of new towns and cities, and in this extension of the old cities over their rural neighbourhoods, the manner of the growth and change is mostly left to private interest and to chance. The general plans, if they exist at all, are arranged and the streets are laid out as the present temporary convenience may suggest, or as the interests of the land proprietors may require. The questions of the facility of present travel or of conducting business, the cost to the public of building the road and the sale of the lots, are first considered in preparing or extending the sites of towns. Very few of them, in their incipient and amorphous stages, have their destinies shaped by that far-reaching economy that looks upon vacant lands as the seat of a future city, and arranges the plans, lays out the streets, and determines their direction, width, and grades, in reference to the sanitary wants of a dense population that shall ultimately cover them.

When the streets are first run through the open fields, a passage way for travel only seems to be needed; and even when the houses are first built, they are not high, and the land being comparatively cheap, the buildings are set back with yards between them and the highway. Thus far the public wants are satisfied, for they need and demand no more space for their use. But when the pressure of population and business, and the increased value of land, line these highways with high and continuous houses and shops close by their borders, then the streets are found to be narrow and dark, and the want of more room for light and ventilation is felt.

As population becomes more dense and land more valuable, the owners of vacant lots and gardens find it for their interest to run courts into them, and line these with houses. These courts are closed at one end, and sometimes at both, except by an arched passage leading under the buildings at one end into the open street. Sometimes one court leads from another. These places are generally very narrow, and the houses that border upon them are often high. Thus the ventilation in great measure is excluded, or reduced down to the lowest point that art and cupidity can bring it. And light is provided in the same sparing way. Consequently, two of the great essentials of life and enjoyment, light and air, which are offered by a beneficent Providence with unlimited bounty, are supplied to the dwellers of these narrow and almost closed courts with the most grudging parsimony.

The lands into which an old city expands, or over which a new city is created, are usually in the hands of many proprietors, who have no other interest than to convert their lots into money. All that is not thus converted is lost to them. No one of them feels it to be his duty, or is induced by his views of his own interest, to provide for the wants of future generations of dense population, by leaving unoccupied any open fields for common and public use. Consequently, our American cities are growing up and expanding, without commons and public grounds, places of promenade for men and women, and play for children and youth, apart from the common thoroughfares; or, if they are provided, it is with few exceptions done so meagrely as to fall very far short of the wants of the inhabitants of a compact city.

If this recommendation of the commission should be universally adopted, and the projectors of new cities, or those who expand any old city or town, were required to lay their plans, arrange their streets as to direction, width, and grade, and to leave open grounds for public use, solely in reference to the life and energies of the dense population of the future city, health, comfort, and productive power would be increased, the earnings would be augmented, the expenses of sickness and the cost of conducting business would be diminished, and wealth multiplied through coming generations beyond the present calculations of the projectors.

The commission recommend that all public buildings, churches, school-houses, court-houses, theatres, and halls for public assemblies of whatever nature, be planned and built with express reference to the health of the occupants, and this be considered especially in regard to the situation, warming, and ventilation.

They advise that all persons, whenever they erect any building, whether for dwelling or for the purposes of business, give notice to the local Board of Health of the sanitary arrangements. They advise that this local board very carefully notice the sanitary condition and circumstances of people dwelling or working in the vicinity of ponds, and especially of such as are alternately flowed and drawn off for mills.

The thirty-third recommendation advises "that the general management of cemeteries, and other places of burial and of the interment of the dead, be regulated by the local boards of health."

We have already spoken of this subject at considerable length,\* and we are now glad to see the opinions which we then gave, sustained by public authority, and urged upon the government for their adoption, and upon the people for their action.

Proper respect for the dead, and the tenderest regard for the agonized sensibilities of their relatives, are perfectly consistent with a due regard to the health of the living. On the contrary, the manner of burial which is common in many cities and towns is disrespectful to the deceased, revolting to the feelings of mourning friends, and injurious to public health.

All our notions of comfort in sickness, all our satisfactory associations with death, are connected with retirement and peace. The true respect for the dead, and regard for the feelings of surviving friends, require that the resting-places of the deceased should be in the fields of quiet and seclusion, apart from the scenes of labour and business, the haunts of indifference and revelry, and the tumult of business. They should rest where none come but to contemplate, where the mourner can retire to commune with the departed, undisturbed by the noise of busy life.

The old cemeteries are in the midst of dense streets and the crowded population of many cities and towns. The graves, which are sometimes pits, are dug as near to each other as possible, and the corpses are piled one upon another, from the depth of many feet in some places to within a few inches of the surface. Thus, these burial-grounds are filled and filling to their utmost capacity with the bodies of the dead, which form almost one mass of decomposing and corrupting flesh. During this process of decay, they send forth their gases and fluids to affect the neighbouring springs and waters that percolate through the earth, and to rise above the ground and vitiate the atmosphere.

The health of the living must necessarily suffer, to a greater or less extent, from drinking the waters which are thus affected, by breathing the air which is thus tainted, or by the absorption through the cutaneous surface of any of the exhalations from the decomposing bodies of the dead.

The establishment of rural cemeteries in the vicinity of cities and out of the villages meets and obviates these objections. The effluvia which they send forth cannot reach the dwellings to corrupt the air, nor the gases reach the springs to vitiate the drink of the living and to impair their health. They leave the dead in their long homes in quiet and peace, undisturbed by the cupidty that removes them in order to sell or let their graves to new

occupants, and there the mourners can retire and be alone with the departed friends.

The twenty-sixth recommendation advises "that measures be taken for preventing or mitigating the sanitary evils arising from foreign immigration."

The commission, after informing us of the number of immigrants that arrived in Boston, "125,000 within the last four years," shows that many of these foreigners bring their poverty and their low health from their native lands. In 1834, the poor law commissioners of England recommended that the parish officers be authorized to pay the cost of the transportation of any of their paupers to a foreign country.

"Some poorhouses have been emptied, and their inmates transported to America. The stream of emigration has increased, and seems to gain a new accession of strength in every passing year. Massachusetts seems to have resolved itself into a vast public charitable institution. Into her institutions are admitted the emigrant pregnant woman at her lying-in, the child to be nursed, the pauper to be supported, the criminal to be punished and reformed, the insane to be restrained and cared for, the sick to be nursed and cured, the dead to be buried, the widow to be comforted, the orphan to be provided with a substitute for parental care; and here ten thousand offices of social and personal kindness and charity, not recognized by the laws of the State, costing thousands upon thousands of dollars, are bestowed."\*

"Our own native inhabitants, who mingle with these recipients of their bounty, often become themselves contaminated with diseases, and sicken and die; and the physical and moral power of the living is depreciated, and the healthy, social, and moral character we once enjoyed is liable to be forever lost. Pauperism, crime, disease, and death stare us in the face."†

There is much reason for supposing that foreigners, and especially the natives of Ireland and their children, in this State, have a lower degree of health than the natives of this country of Anglo-Saxon origin. They furnish much more than their due proportion of the inmates of our hospitals, poor-houses, and prisons.

From all the facts that can now be obtained relative to the health and longevity of our foreign population, it is very probable that their vital force is lower than that of the natives. They, especially the Irish immigrants, seem to have less physical, intellectual, and moral power, and hence they are more frequently sick, they die at earlier periods, a larger proportion of their children die, they are less capable of supporting themselves, they are more frequently led to violate the laws; whether this is owing to native and inherent weakness, or to the influences of this climate, or the circumstances and conditions of a strange land and a strange society, is yet to be revealed.

The thirty-seventh recommendation of the commission is worthy of very careful consideration, and we commend it to the people in all parts of the country. They advise "that a sanitary association be formed in every town and city in the State, for the purpose of collecting and diffusing information relating to public and personal health."

Most of the sciences and arts, and the important interests of the people, have their associations to encourage and establish them. The friends of these find great advantage from these combinations to gather and diffuse knowledge. Agricultural societies have done much to elevate and advance that profession. By their mutual consultations, by their exhibitions, by their reports and their journals, they have brought to one focus the wisdom and the experience of every part, and again they have spread these before the whole. Thus, all the people have been induced to look to the higher, and many to the highest

\* Report, page 205.

† Ibid.



standard, and have endeavoured to improve their own works thereby, and all have consequently made great advancement. Societies are everywhere formed to create an interest in and for the diffusion of the principles of other arts and the strengthening of other interests. By meetings and discussions, by publications and by example, they excite a love for, and gather and extend the knowledge of, the principles which they desire to cherish.

By the same means, an interest may be created in the laws of health; a knowledge of the elementary principles of life may be obtained and diffused, and the people led to understand what these are and how to apply them in their self-government, in all the chances, labours, and affairs of common life. They may be induced to inquire, whether human life cannot be improved as well as the life of the lower animals; whether the deficiencies of health and strength, the discomforts, pains, sickness, and early mortality may not be owing to causes which can be removed; and whether all the means and opportunities that are offered to man for the development and maintenance of his powers are used to their best advantage.

These sanitary associations are now common in England: and there they are doing great good in ferreting out sanitary evils and the causes of low health and sickness, and thus creating a public desire and will to remove or ameliorate them. Their addresses and their journals are full of interest upon these topics, and teach us, as well as themselves, valuable lessons in regard to the practical advantages of obeying the law of life.

The London Statistical Society has been very active in this matter, and has caused some important investigations as to the condition and health of the people and especially of the poorer classes. Their reports are printed in their journal, and are worthy the careful study of the people of America as well as of England.

We earnestly hope that, according to the suggestions of the commission, similar societies will be formed in this country. There should be, in every town and city, associations of men in pursuit of the best means of developing strength and maintaining health, jealously watchful of every nuisance and every injurious habit and custom, looking carefully after every defect and circumstance that may, in the least degree, interfere with public or private health, with the fullness of human power on earth.

The thirty-eighth, thirty-ninth, fortieth, and forty-first recommendations of the commission advise,

"That tenements for the better accommodation of the poor be erected in cities and villages."

"That public bathing-houses and wash-houses be established in all cities and villages."

"That whatsoever practicable the refuse and sewerage of cities and towns be collected and applied to the purposes of agriculture."

"That measures be taken to prevent, as far as practicable, the smoke nuisance."

These are worthy of commendation; we have already spoken of them;\* and now we pass to the forty-fourth recommendation, which advises "that institutions be formed to educate and qualify females to be nurses of the sick."

Here comes a tender point; we want a corps of well-educated nurses, and yet we hesitate: thinking "a little learning is a dangerous thing" in medicine, we fear that females trained to the professional care of the sick may wish also to prescribe and thereby interfere with our plans, or assume responsibilities which should rest only on those who are completely educated in the

principles of the healing art. Yet, if they are properly educated, there is no ground for this fear; certainly, if our nurses were systematically trained to their employment, we should rest with more confidence that our prescriptions would be faithfully administered. Few physicians have been long in practice without having occasion to feel how much they and their patients are in the hands of the attendants, who are often ignorant and sometimes officious and meddlesome, and, how often their carefully studied plans of treatment are rendered feeble and ineffective for want of discreet and faithful co-operation in those who stood and watched permanently by the bedside.

For other employments, men and women serve an apprenticeship: they devote some months or more to learn the art of dress-making, spinning, straw-braiding, &c.; but ordinarily, no such preparation is required for the care of the sick. Any one whose heart is warm with benevolence, or who has no other occupation, or even who has failed in other pursuits, may set up for a nurse and obtain employment.

If our hospitals would admit women to learn the art of nursing the sick, and, after a proper apprenticeship, send them forth, with certificates of proper qualification, to be employed in the sick chambers of private life, they would do a great good, and aid to supply a want that is now very generally felt, and in some cases very severely.

The forty-fifth recommendation advises "that persons be specially educated in sanitary science, to be preventive as well as curative advisers."

This strikes at the root of the whole matter, and, if adopted and carried out, will have an important influence on the sanitary condition of the people, on the studies of our profession, and on their relation to those who employ them. "They that are whole need not a physician, but they that are sick." This doctrine has been believed by the world, and made the law of all time, from the beginning. The world does not believe it wants, and no class of men prepare themselves to give preventive advice. There is no demand, and consequently no supply. The sole vocation of the physician is looked upon as curative, as remedial of an evil when it has come, but not as defensive against it. Men are generally willing to seek and to pay for the skill that redeems them from disease and pain, but they have no idea of looking for, or paying a man of science for warning them of, and defending them against, this evil. A prudent man consults his lawyer as to the proper course to be pursued in order to avoid the entanglements of the law, and the risk or loss of property, and pays him liberally for this cautionary advice. But, in regard to sanitary measures, the location of a house, the ventilation of a dwelling, the selection of occupation, diet, habits, or any other thing that may immediately or remotely affect the health or strength of himself, his family, or his neighbourhood, if he consults his physician at all, which, however, is not frequently done, he expects his adviser to give his opinion on the friendly or neighborly account, and not as a matter of commercial value. And even then this advice is not held in the same estimation, nor considered as worthy of confidence and obedience, as the opinions of the same adviser when consulted in regard to any disease.

As the world is glad to obtain and pay for the wisdom that can remove a fever, but is unwilling to pay for that which keeps the fever away, the natural consequence is, that men, when they prepare themselves to be physicians, seek for that knowledge which will be demanded and bought by those who will employ them. Allowing to the medical profession all due credit for philanthropy, which we claim for them in no small measure, yet a great object of the physician, like that of other men, is to obtain his support by his

calling. He, therefore, instructs himself with that kind of knowledge which the people will purchase. Looking at the market, he gathers for other men's use that commodity which they are willing to seek and pay for, and which is thus convertible into bread for himself and his family. He therefore becomes a curative and not a preventive physician. And until mankind looks differently upon health and disease, and considers that the former is very much in their own hands, and that the latter may be prevented, in a great measure, by proper self-management, and will set a just value on the skill that shall guide them safely from the attacks of disease, it is altogether vain to expect that ours or any other profession will devote the time and labour necessary to be accomplished and successful preventive advisers in sanitary matters.

The forty-sixth recommendation advises "that physicians keep records of cases professionally attended."

We yet need more tangible and definite grounds to determine the events of disease. We have general and conjectural opinions on this point, but we have no accurate data for comparing the mortality of different diseases, or of the same disease in different seasons, or periods, or in different places or classes of society. Some of the British vital statisticians have endeavoured to ascertain, from a few records, the proportion of deaths to the amount of sickness or to the number of attacks of all kinds of disease. But their inferences have no regard to special diseases, and throw no light upon their comparative curability or fatality.

The Massachusetts Medical Society took this matter into consideration in 1843. It was referred to a committee, who made their report the next year. They advised that a universal system of registration of disease be adopted by the members of the Society; that the records of all these physicians be annually gathered; and that the committee of the Society digest all these returns into one system, and print the results in a tabular form, with such suggestions or annotations as may be supplied to them, and distribute the volume, when printed, to the Fellows of the Society. The Society accepted and printed the report, and distributed it to all its members; but no further action was taken upon it; and this plan thus slept the sleep of death. Again it is proposed by this commission, and, we trust, with better results.

We have thus given, in considerable length, the substance of this noble and valuable report. After all that has been done by the people and the governments of some countries of Europe, and after all that has been done by individuals and societies in America, this report is the first approach to legislation from any government in this country.

This plan of Mr. Shattuck is an extensive one. It comprehends more than the friends of the measure originally proposed for immediate adoption, and more, we fear, than any of our legislative bodies will see their way clear to adopt at once. The original friends of this measure only asked for a sanitary survey; but they had no doubt that, when this should be undertaken and accomplished, the people would see the advantage of further action, and call upon their legislators to provide successively for all the sanitary measures which are proposed in this report.

As it is, we commend this report, with all its plans and details, its facts and arguments, to the careful consideration of physicians and philanthropists, of political economists and legislators, with the confident belief that the condition of man will be improved, and the interests of humanity advanced, as well as public and private wealth increased, by its adoption.

E. J.

ART. XIV.—*Musée d'Anatomie de la Faculté de Médecine de Strasbourg — Histoire des Polypes du Larynx.* Par C. H. EHLMANN, Professeur à la Faculté de Médecine de Strasbourg, &c. &c. &c. Fol., avec six planches lithographiées: pp. 58. Strasbourg, 1850.

*Anatomical Museum of the Faculty of Medicine of Strasbourg — History of Polypus of the Larynx.* By C. H. EHLMANN; Professor to the Faculty of Medicine of Strasbourg, &c. &c. &c. Fol., with six lithographic plates: pp. 58. Strasbourg, 1850.

THE author of the book whose title we have copied above was induced to present to the profession this result of his studies in the matter of polypus of the larynx, partly because of the importance of the subject, and partly because his own experience in the treatment of the affection enables him to place it before his brethren in a more favourable light than they have before seen it. In the year 1844, he was called to attend upon a case of polypus of the larynx, in which death was imminent; he opened the trachea and larynx, removed the offending growth, and saved the patient's life. This case was reported to the Academy of Sciences, of Paris, and was pronounced by that learned body to be the first instance in which this operation had been successfully performed in this disease; and Stromeyer, President of the Scientific Congress which assembled at Aix la Chapelle, in 1847, declared that it was one of the most brilliant conquests of modern surgery.

In this essay, M. Ehrmann has collected the reports of all the well-authenticated cases of this affection which he has found recorded, and lays them before the reader, accompanied by drawings illustrative of many of them.

No tabular statement of the phenomena attending the disease in these cases is presented; indeed, the character of the reports hardly admits of a satisfactory exposition of this kind. We will endeavour, however, to analyze the details as well as we may, inasmuch as we think that any reliable information concerning this interesting and obscure affection must be worthy of attention.

The number of cases which M. Ehrmann reports amounts in all to thirty-six. These are collected from various sources: two are from Lieutaud; three from Desault; one from Pelletan; two from Schultze; one from Otto; two from Andral; one from Senn; one from Urner; one from Dupuytren; one from Brauers; one from Rayer; one from Dawosky; one from Trousseau and Belloc; one from Gérardin; one from Mayo; one from Ryland; one from Rendtorff; three from Gluge; one from Nasse; one from Stallard; one from Bertherand; one from Rue; and two which he observed himself: the remaining five occurred in animals, two of them in horses, and three in cows. These cases are reported briefly, but satisfactorily as regards the main points, in most of them.

The prominent symptoms in these instances were, sense of the presence of a foreign body in the larynx, producing cough, alteration in the voice, dyspnoea in paroxysms, and finally complete prevention of the entrance of air, and death. But these symptoms varied considerably in intensity and in their progress.

The mode of invasion differed. In one case (obs. 19) the first symptom was sudden and inexplicable loss of voice, to which was added, at the end of eighteen months, cough, with dyspnoea; death at the expiration of two years. In others, and most commonly, the affection manifested its existence by the occurrence of slight dyspnoea, or trifling change in the sound of the voice, at a period remote from the termination, in one individual two years before death (obs. 31), in another six years (obs. 29). On the other hand, the progress of the affection may be more rapid, as in the instance described in obs. 7; a

boy, six years old, presented symptoms of croup, in the latter part of February; the attack did not pursue its usually rapid course, but became gradually chronic, the child having more or less fever all the time, and his voice being always muffled; towards the beginning of May, he recovered in a measure his strength and flesh, but on the 12th July, about twenty weeks after the first seizure, he was suddenly attacked with suffocative dyspnoea, and died in the paroxysm. At the *autopsy*, a polypus was found seated near the base of the epiglottis cartilage, and closing the chink of the glottis. And in obs. 17 is recorded the history of another boy, ten years old, in whom the cause of formation of the polypus which destroyed his life is ascribed to the prior occurrence of repeated attacks of croup, under which the child suffered from trifling exciting causes. In such instances as these, in which the disease is of an *acute* character, the symptoms may abate from time to time, or they may continually increase in intensity, consisting of a croupy cough, constant or interrupted dyspnoea, with occasional or frequent paroxysms of suffocative orthopnoea, in one of which the sufferer usually dies; or death may be produced by a more gradually induced suffocation. In the more *chronic* cases, the symptoms may be thus enumerated: *feebleness, hoarseness, or other alteration in the tone and character of the voice*, gradually increasing, and amounting at last to aphonia, either persistent or interrupted; *dyspnoea*, varying in degree, but generally steadily augmenting, and in almost every case attended with paroxysmal aggravations, which may be so protracted in their duration as to simulate death (obs. 13), or, as in most of the observations, as actually to prevent restoration; sometimes this dyspnoea is produced during the act of *expiration*, and apparently by it, and is relieved by the *inspiratory* effort (obs. 3, 4, 5 and 8), but the reverse may be the case, or the difficulty of breathing may be equally great in both (obs. 13 and 18); *cough* is always present, but its characters are not particularly significant, being croupy, or simply hoarse, continuous, or in paroxysms, dry or attended with expectoration, appearing at the commencement of the difficulty, or at a later period; *the expectoration* is generally not characteristic of this affection, being usually formed of simple mucus, more rarely of mucus streaked with blood (obs. 8 and 9); the *respiratory sounds* were such as to indicate, generally, the existence of an impediment of some sort to the free passage of the air to and from the lungs; but they were not always the same in different cases; sometimes they resembled the noise of snoring, but more frequently they were merely harsh or stridulous; these sounds may be rendered more audible by the aid of the stethoscope. In several of the observations, there was experienced a *sensation of a foreign body in the larynx*, or of some stiffness and uneasiness in the acts of breathing and swallowing (obs. 8, 9, 12, &c.), but in other cases no such sensation was complained of by the patient, or it was omitted in the reports; rarely was there any tenderness or pain in the larynx.

We have said that, in the cases recorded by M. Ehrmann, the expectoration was not, in general, significative of polypus of the larynx; but in two of them it was so. The eighth observation illustrates this point in a very interesting manner; it is as follows: "A man of sixty-five years of age, but otherwise hearty, had been for several years past troubled with *hoarseness of voice*, which he attributed to a cold, and which gradually rendered him almost aphonic. He coughed but seldom, had no pain in the larynx, but experienced a disagreeable sensation, as of a substance which closed the larynx whenever he swallowed solid food, and when he expectorated mucus. Fearful of being affected with *phthisis laryngea*, he at length consulted a physician. The latter having exhibited to him the most appropriate remedies, both internal and external, the patient expectorated, a few days afterwards, in a paroxysm of

coughing, a *small globular, fleshy, red and solid mass*, of the size of a currant, and two days later a *similar body*, about as large as a small cherry: immediately afterwards, his voice and the facility of breathing were restored. At the expiration of some weeks, the patient expectorated, for the third time, a *fleshy mass* as large as a pea, and furnished with a very *delicate pedicle*. But the roughness of the voice and the dyspnoea soon returned: the latter symptom became so much aggravated that the abdominal muscles grew very painful, in consequence of their powerful contractions in respiration. Sometimes a slight cough occasioned the expulsion of a very viscid matter, tenacious, and at times mixed with blood. The patient's powers gradually sank, and he died of slow suffocation.

*Autopsy.*—The larynx was almost completely ossified, and the epiglottis cartilage was loaded with an abundance of fat. A *fleshy and nodulated tumour* of large size was found, as it might be, suspended in the glottis, springing by quite slender pedicles, surrounded by fibrous appendages, from the inferior vocal ligament on each side: it was consequently movable, and was formed by the union of three excrescences, each of which was as large as a hazelnut: they were roundish, rough, very firm, elastic, and of a pale red colour. One of them, situated above the glottis, was prevented by its volume from engaging itself in the chink; but the other two, placed below this opening, closed it so completely during the expiratory act, that suffocation must inevitably have followed. Apart from this, the vocal ligaments themselves, the ventricles of Morgagni, and the entire mucous membrane of the larynx were not at all abnormal in their appearance, excepting that here and there were a few red spots, and vessels of small calibre going to the polypi during the pedicles." There is a very good drawing of this larynx among the plates.

The twenty-ninth observation records a similar expulsion, at different times, during violent paroxysms of coughing, of small fragments of tissue similar to that of the tumour which was subsequently removed by the operation practiced upon the patient by M. Ehrmann, and which we shall have occasion to mention again directly. And even if the polypus, or portions of it, should not be actually expectorated, it is still interesting, though not available in a diagnostic point of view, to know that it may, by the violence of the cough, become detached from its connection with the mucous membrane and produce suffocation, as was the case in the twenty-eighth observation: "A woman, aged forty years, entered the hospital in a state of extreme exhaustion: she presented the symptoms of bronchitis, with severe cough and dyspnoea. During three or four days, she seemed to be getting better; but a *paroxysm of coughing* came on suddenly, and she died before any assistance could be offered to her. *Autopsy.*—The lungs were very emphysematous. The ramifications of the bronchial tubes were healthy, but the large trunks were very much congested. In the *trachea* was found a *polypous mass detached*; it was as large as an almond, and had a pedicle nearly three-fourths of an inch long. It was supposed at first that this body came from some point of the *larynx*, a part in which this kind of growth most frequently originates; but, on examining the *trachea*, we discovered upon its anterior wall, at the distance of half an inch below the cricoid cartilage, a reddened and thickened wound, below which the mucous membrane immediately regained its healthy appearance."

The expectoration of such matter as that which was thrown from the larynx in the cases mentioned above, viewed in connection with the alteration in the voice and in the character of the respiration, which has generally preceded such an occurrence, would be almost conclusive evidence as to the existence of polypus of the larynx. Other strong diagnostic testimony to the same effect may occur in the nature of the respiratory sounds, as in obs. 29, in

which the patient was able, by a quick movement of inspiration and expiration, to imitate the noise made by a valve opening and closing alternately; or in the assurance on the part of the patient that a foreign body seems to him to be forced by the respiratory acts against the chink of the glottis, and to be the cause of all his sufferings (obs. 15, 29, &c.); or finally, by the surgeon being enabled to feel with his finger introduced far into the patient's throat, a fleshy mass engaged in the rima glottidis, and perhaps projecting upwards from it (obs. 16).

The size of the tumours varied in different cases, from that of a pea to that of a pigeon's egg, or even larger. In some instances, they were pediculated, in others sessile upon a broad base.

The diseases upon which this local affection was engrafted, in the instances from which M. Ehrmann's observations were drawn, were, so far as is mentioned, *phthisis pulmonalis*, in four cases; *sypilis*, or what seemed most probably to be such, in three; *chronic disease of the urinary passages* in one; *scrofula* in one; in the remaining cases, the individuals were either healthy, or no mention is made of their general condition.

Their ages respectively were as follows: Between 1 and 5 years, one; 5 and 10, two; 10 and 20, three; 20 and 40, three; 40 and 60, nine; above 60, three; in the others, the age is not specified.

The duration of the complaint is given as twenty weeks in one case, some years in another, eighteen months in a third, several weeks in a fourth; one, two, and three years in as many others; but generally the time ascribed is rather indefinite, as "*a long time*," "*some time*," &c. Indeed, in some of the patients it would have been difficult to fix any reliable date for the commencement of this laryngeal affection, because they had for some time previously been the prey of disease of the respiratory organs, which are generally attended with cough, alteration of the voice, and the like symptoms.

As to the causes of the morbid condition of the larynx, we can glean but scanty information from the observations recorded, excepting with reference to a few cases. In a child, the subject of the seventh observation, which we have already quoted at length, we are inclined, from the narration of the symptoms, to consider an *attack of croup* as the starting-point and the exciting cause of the modified local nutrition which led to the formation of the polypus. And in the boy whose history is recorded in the seventeenth observation, which we have also adduced in connection with the other, the same cause may be assigned. In the latter case, the child had repeated attacks of croup; very trifling causes, "the slightest chilling, exposure to a current of air, excited invariably a very hoarse cough;" and how far this excessive and unusual sensitiveness of the mucous membrane may itself have depended upon some peculiarity of organization which occasioned both the cough and the development of the polypus, we cannot of course determine. We are told, however, that the patient was of "a delicate and scrofulous constitution," and we know that in such individuals the mucous membranes, particularly of the respiratory organs, perhaps, are very commonly thick, puffy, and very vascular, and, we may infer from such a constitution, prone to hypertrophy, requiring only the inciting action of such a cause as existed in this little individual to develop some local out-growth.

In like manner, we may certainly admit that it is possible that the polypus which grew upon the mucous membrane of the larynx in several others of the cases recorded by M. Ehrmann, may have taken their origin and outstart in a frequently repeated *catarrhal affection* of this membrane; in some of these patients, such a morbid condition is noted as having existed, and in

others their occupations exposed them constantly and inevitably to vicissitudes of the weather, which were well calculated to induce such a vascular turgescence of the laryngeal membrane. But why this particular result should have ensued in this limited number of cases, when thousands of others, possessing similar constitutions, and exposed to like disturbing influences, suffer from repeated attacks of croup and catarrh, and escape without the production of polypus of the larynx, we cannot fathom.

Several of the patients whose histories are recorded by the author, were laboring at the same time under *pulmonary phthisis*. We know that ulcerations of the lining membrane of the larynx, dependent in some measure, at least, upon the direct irritative action of the sputa, as they pass over this surface, are very commonly met with in phthisical subjects, and it certainly would not surprise us if some other modification of nutrition, as, for example, a *polypus*, should be the result of the same cause. But, on referring to the "*Researches*" of Louis, we find no mention of his having seen any such outgrowth in the numerous patients whom he observed, and in the subjects which he examined after death; and we are struck, moreover, with the fact that, in his examinations, the *posterior surface* of the larynx was much more frequently the seat of ulcerations than the anterior; while, on the contrary, in the observations of M. Ehrmann, the polypi were found upon the *anterior surface* of this organ in almost all the cases.

The *syphilitic dyscrasia* may be looked upon as another predisposing cause of the production of polypus of the larynx. M. Ehrmann reports several instances in which this constitutional taint co-existed with the local affection in question. But, in the greater proportion of the cases, there seems to have been no assignable cause for the local phenomenon, and we are left to "float, like Pyrrho, on a sea of speculations," with reference to them.

*Pathological Anatomy—Histology.*—Under this heading, M. Ehrmann offers some very interesting and instructive observations. He says, "the form and structure of polypous tumours are variable; they are sometimes roundish, sometimes irregularly shaped, united in clusters, granular, lobulated, most frequently pediculated; they occasionally resemble condylomata in appearance. Their attachments, whether broad or slender, single or multiple, are rarely traversed by blood-vessels of any size. They may occupy the whole internal surface of the larynx, but they are attached more commonly about the glottis, particularly to its inferior ligaments; they are more rarely found in the substance of the aryteno-epiglottic ligaments, and in the ventricles of Morgagni. The epiglottis is the favorite seat of those vegetations which are supposed to be syphilitic.

"Polypus of the larynx is constituted sometimes of fibrous or fibro-cellular tissue; and in other cases of all the elements of the mucous membrane united, but modified in character. When the tumour belongs to the first class, it assumes the form of a firm and compact mass, resembling that which exists in the proper fibrous tumours; in this respect, the tissue composing this species of polypus may be compared to that of the ligaments of the glottis, or to that which is found in their immediate vicinity; thus we see the pedicles of these tumours originating in the fibrous appendages, and blending with the fibrous element of the vocal cords, an observation which has been already made by Albers. The tissue composing these tumours is traversed by very minute blood-vessels, and their external investment consists of a thin layer of the mucous membrane modified in its structure." The polypus described in the twenty-second observation was of this nature, as is proved by the description which is given of it when examined by the aid of the microscope—(p. 32).

Of the other variety of polypus, that in which the tumour is composed



chiefly of the *mucous membrane*, the subject of the twenty-ninth observation affords a very good illustration. It was composed chiefly of the epithelium, which was perfectly recognizable by the form and arrangement of its cells. Of this kind of polypus the author thus speaks: "It is probable, then, as the result of these data, that hypertrophy of the mucous membrane involves especially its *epithelial layer*, since it is this which we find in superabundance in the mass which forms this variety of tumour; the *areolar tissue* which is met with in it belongs, as is well known, to the structure of all the mucous membranes; and if some fibrous tissue should occasionally be found at the base of these vegetations, it is as if for the purpose of forming a transition between the true mucous polypus and the fibrous."

M. Ehrmann coincides with the opinions held by Lebert, with reference to mucous polypi. The latter distinguished pathologist thinks that, instead of calling these growths "*polypi*," they should be considered as simple excrecences or *hypertrophies*, either of the epithelium, or of a circumscribed portion of the entire thickness of the mucous membrane, or of only a portion of the sub-mucous cellular tissue. This view of the subject simplifies it very much, and is, we have no doubt, consonant with facts.

The reader will find, by reference to the observations of the author, a great many minor points of interest, which we have not been able to notice in this sketch, because we did not think it expedient to extend our limits.

As to the treatment of polypus of the larynx, M. Ehrmann suggests no other method than that of removing it through an opening made along the middle line of the larynx and trachea, and we doubt very much if it be possible to relieve the patient in any other manner. In one of the cases reported (obs. 15), the surgeon, M. Brauers of Belgium, opened the patient's larynx, and endeavoured to destroy "the excrecences which filled the cavity of the organ," by the applications of the acid nitrate of mercury, and finally of the actual canter: but, so far from removing them, they increased in volume after each canterization, and although the patient was still living at the date of the report, his death was confidently expected. We presume that no other result can be anticipated from similar applications which might be made to the interior of the larynx, in such cases, after the method of Dr. Green.

M. Ehrmann reports five cases in which the operation was performed upon human patients, and two upon animals, a cow and a horse. Of the former series we have just cited one. The second instance was in a patient of Tronsseau and Belloc (obs. 18); the man was forty-two years old, and had enjoyed good health, until about eighteen months before the operation was performed, during which time the polypus had been growing. The larynx was opened only when it was evident that the patient would otherwise die speedily of suffocation; some arterial and venous hemorrhage occurred when the incision was made, but this was arrested by slight compression. As soon as the cannula was introduced into the opening, the patient's breathing was relieved, and he continued to do well during the five following days: but then an attack of gangrenous pleuro-pneumonia came on, of which he died in the course of twenty hours. At the autopsy, "all the left half of the mucous membrane was of a grayish-green colour; the inferior vocal cord was very much swollen, the superior less so; the left ventricle was bathed with an excessively fetid grayish sanies, and occupied by an accidental growth of a lardaceous consistence, and an ash-white colour. This tumour was continued into the space which separates the cricoid cartilage from the posterior part of the thyroid, and appeared a little outside of and behind the larynx. A portion of the thyroid cartilage on the left side was carious. This same tumour projected from the ventricle, when it assumed the consistence and colour of a

mucous polypus, and encroached considerably upon the cavity of the larynx." We will not repeat the post-mortem appearance of the lungs and other organs. In this instance what the termination of the case might have been if the polypus of the interior of the larynx had been recognized and removed, we cannot say.

In the third instance, from Gluge (obs. 26), the larynx was opened, but the patient died soon afterwards. In this case, as in the last, the tumour was not recognized. It was very large indeed, originated on the mucous membrane of the larynx, occupied almost the entire cavity of this organ, and caused a considerable projection externally.

In the fourth case, from Bertherand, of the Strashurg military hospital, (obs. 31,) the patient was a Polish superior officer, sixty years old; his health was good, and he complained only of dyspnoea and a croupy cough, which had gradually increased during two years, and had lately become very severe at times. The operation was performed when the patient was *in extremis*. He did not experience much relief, until some hours after the larynx had been opened and the canula introduced. *The patient died on the ninth day* after the operation, of bronchitis and pneumonia, attended with the formation of small abscesses in the right lung and liver. Moreover, the thyroid body was much enlarged, so that it displaced the pharynx and oesophagus, and it had undergone a cancerous degeneration, as had also the right lung and the liver. But the polypus escaped the notice of the operator during the patient's life, and was only recognized after death; this was the case, as we have seen, in the last three instances, the operation having been undertaken in ignorance of the existence of a polypus, and simply to relieve the symptoms of obstruction.

The fifth patient was operated upon by Mr. Ehrmann himself. We have alluded to this case before (obs. 29). The character of the symptoms admitted of no delay, and their cause seemed to be unmistakable. The incision was made along the median line of the neck; the crico-thyroid membrane, the cricoid cartilage, and the first two rings of the trachea were divided; very little bleeding followed; a canula was introduced into the opening, and the patient was entirely relieved. M. Ehrmann determined to postpone the conclusion of the operation, until his patient had recovered from the depression and fatigue which she had suffered before it. Accordingly, after forty-eight hours had elapsed, the patient's condition being now very promising, he continued his first incision, *the canula being retained in the wound*, through the thyroid cartilage towards the hyoid bone. The polypus was then removed by excision. The patient did well; on the twenty-first day, the air ceased to pass through the opening, and at the end of a month, having spent a week in the country, she was quite well, and the wound had entirely healed. She was attacked with typhoid fever about seven months afterwards, and died. The larynx was carefully examined; the left inferior vocal ligament, upon which the polypus was seated, presented a few very small granulations upon its surface, and none, rather larger than the rest, was situated at the point of junction of the two inferior vocal ligaments.

In the horse and cow, the operation, performed under similar circumstances to those present in the human patients, was successful.

The author advises that the operation should, if possible, be performed as he practised it in this case, *i. e.*, that the patient should be allowed to rest and recruit after the first part of the operation, and that during the performance of the second part the canula should be left in the windpipe.

We have been exceedingly interested by the perusal of M. Ehrmann's book, and commend it to the attention of the profession.

F. W. S.